



O. H. M. S.

W. J. Gerald
Deputy Minister.

LABORATORY

OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA

BULLETIN No. 135

SPIRITUOUS LIQUORS

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W. J. GERALD, Esq.

Deputy Minister of Inland Revenue,

Ottawa.

OTTAWA, July 5, 1907.

SIR,—Consequent upon your letter (40602) of 27th December last, addressed to the late chief analyst, a collection of spirituous liquors was ordered to be made by Mr. Food Inspector Conklin, throughout the province of Saskatchewan. Twenty-two (22) samples were obtained, and the results of their examination are given in Table I. Special mention was made of Wolseley, Stockholm and Neudorf, as points of collection, and instructions furnished our inspector, made note of this; but the blocking of railways at the time (January) made it practically impossible to visit the two last named places.

Your further letter (41163) of the 30th January, authorized a similar collection throughout the province of Alberta. Forty-six (46) samples were obtained in February and March; and the results of their examination (except two samples which were broken in carriage) appear in Table II.

The immediate cause of this inspection, was the reported death of some persons who were thought to have been poisoned by the use of adulterated liquors. The samples which form the subject of this report, were obtained at public bars, &c.; and may therefore be taken to represent the average whiskey of the provinces in which they were sold. It is gratifying to find that no drugs, nor poisonous additions of any kind have been found in these liquors.

Particular attention has been given to the detection of methyl alcohol (wood spirit), since this is known to have poisonous properties. Its absence has been proved in every instance.

I beg to submit to you, for publication, as Bulletin 135, the accompanying records of work done upon these samples.

I have the honour to be, sir,

Your obedient servant,

A. MCGILL,

Acting Chief Analyst.

Preliminary notes.

1. Canada has no generally accepted, or legally established spirit strength for alcoholic liquors. The British Foods Act, fixes 75 per cent proof, as the limit of reduction by water. On the basis of such a standard, the whiskey samples herein reported, may be classified as follows:—

	PROVINCE OF	
	SAS-	KATCHEWAN. ALBERTA.
Samples within 2 degrees of 75 per cent proof..	4	30
" below 75 degrees proof.....	12	5
" above 75 "	5	9
Total examined.	21	43

Percentage of the number examined which are found to be equal to, or above 75 per cent proof strength:

In Saskatchewan.....	43 per cent.
In Alberta.....	88 "

2. Preliminary testing for methyl alcohol has been done by the determination of the refractive index of a carefully prepared distillate at 20° C.; the spirit strength of the distillate being accurately known, any marked lowering of the refractive index, as compared with that of ethyl alcohol, of the same strength, indicates the necessity of a specific search for methyl alcohol.

Experiment has proved that working errors need not produce a deviation of more than 0.5 degree (Abbe Immersion refractometer scale); and that the presence of one per cent of methyl alcohol is certainly detected by the method, in a properly prepared distillate.

RECORD OF LIQUOR

TABLE I.—

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher.	Specific Gravity.
				Quantity.	# c.		
1907.							
Jan. 17	Rye Whiskey...	25033	J. H. Kerr, Moosejaw, 3 pts.	1 50	Gooderham & Worts, Toronto.	9666	
" 17	"	25034	McRoberts Bros., 3 Moosejaw, Sask.	1 60	Gooderham & Worts, Toronto.	9479	
" 17	"	25035	Jas. Mundell, Moosejaw, Sask.	1 50	Gooderham & Worts, Toronto.	9615	
" 17	"	25036	E. C. Mathews, Moosejaw, Sask.	1 50	A. B. Mills, Moosejaw...	9615	
" 18	"	25037	J. E. Wheeler, Caron, 3 Sask.	1 50	Gooderham & Worts, Toronto.	9617	
" 19	"	25038	Stevens & Wilson, 3 Swift Current, Sask.	1 50	Gooderham & Worts, Toronto.	9634	
" 19	Rum....	25039	G. W. Webster, Swift Current, Sask.	2 00	Brown & Wilson, Montreal.	8732	
" 23	Scotch Whiskey.	25040	Robt. Barry, Saskatoon, Sask.	2 00	John Robertson & Son, Dundee, Scotland.	9373	
" 23	"	25041	H. Wilson, Saskatoon, Sask.	1 75	Richard Belevier, Winnipeg.	9345	
" 24	Rye Whiskey...	25042	C. E. Mason & Son, 3 Saskatoon, Sask.	1 50	Gooderham & Worts, Toronto.	9593	
" 24	"	25043	D. Kennedy, Saskatoon, Sask.	1 50	The Western Com. Co., Saskatoon.	9678	
" 25	"	25044	R. B. Fisher, Dunburn, Sask.	1 50	The Western Com. Co., Saskatoon.	9657	
" 30	"	25045	Wm. Harris, McLean, Assa, W.	1 25	Gooderham & Worts, Toronto.	9675	
" 30	"	25046	W. R. Matchett, Balgonie, Assa, W.	1 50	Gooderham & Worts, Toronto.	9629	
" 31	Scotch Whiskey.	25047	T. C. Allen, Qu'Appelle, Assa, E.	1 75	Kirk & Horner, Qu'Appelle.	9241	
" 31	Rye Whiskey...	25048	R. T. Lord, Sintaluta, Assa, E.	1 25	Gooderham & Worts, Toronto.	9478	
Feb. 1	Scotch Whiskey.	25049	Charles Newbury, Indian Head, Assa, E.	1 75	J. D. Robertson & Son, Dundee, Scotland.	9373	
" 1	Rye Whiskey...	25050	Barnes & Ghataky, Grenfell, Assa.....	1 50	H. Walker & Son, Walkerville.	9615	
" 2	"	25051	T. W. Williamson, 3 Walsby, Assa.	1 50	Gooderham & Worts, Toronto.	9475	
" 4	"	25052	T. G. Dixon Moosemin, Assa.	1 50	9483	
" 4	Scotch Whiskey.	25053	S. B. Anderson, Moosemin, Assa.	1 75	J. D. Robertson & Son, Dundee, Scotland.	9400	
" 4	Rye Whiskey...	25054	C. A. Waggoner, 3 Whitewood, Assa.	1 25	E. J. Pelletier, Brandon.	9620	

* The British Sale of Food and Drugs Act, Amendment Act of 1879, Section 6, provides "That it shall be a good defence to prove that admixture with water has not reduced the spirit more than 25 degrees under proof for brandy, whiskey or rum." The numbers in this column shew how far the samples

SAMPLES ANALYSED.

SASKATCHEWAN.

RESULTS OF ANALYSIS.

Alcohol percentage.			Variation from 70 p.c. Spirit Strength.	Examination for Methyl Alcohol.					Remarks.		
Weight.	Volume.	P. v. of Spirit.		Density.	Alcohol p. c.	Refraction.					
						Found.	Theory.	Difference.			
23.9	29.1	51.1	-23.9	.9471	35.95	77.1	77.0	+0.1	Genuine, with added water.		
35.6	42.5	74.5	-0.5	.9401	30.75	81.2	81.2	0.0	Genuine.		
33.8	40.5	71.0	-4.0	.9411	30.25	80.5	80.5	0.0	"		
33.8	40.5	71.0	-4.0	.9430	37.72	78.7	78.8	-0.1	"		
33.7	40.4	70.8	-4.2	.9343	42.02	84.1	83.9	+0.2	"		
32.6	39.2	68.7	-6.3	.9481	35.45	76.3	76.3	0.0	"		
60.5	76.5	134.0	+50.0	.9734	18.54	48.2	47.6	+0.6	"		
41.2	48.6	85.2	+10.2	.9375	41.05	83.4	82.5	+0.9	"		
42.5	50.6	87.7	+12.7	.9340	42.76	84.6	84.0	+0.6	"		
29.0	35.1	61.4	-13.6	.9407	34.67	75.4	75.4	0.0	" with water added.		
30.0	36.2	63.4	-11.6	.9576	30.11	69.7	69.2	+0.5	" "		
31.2	37.6	65.8	-9.2	.9532	32.78	43.4	42.7	+0.7	" "		
30.2	36.4	63.8	-11.2	.9563	30.84	41.4	40.6	+0.8	" "		
32.9	39.5	69.3	-5.7	.9509	34.10	44.4	43.8	+0.6	"		
28.7	46.0	80.5	+5.5	.9429	38.28	48.4	47.6	+0.8	"		
35.6	42.5	74.5	-0.5	.9406	36.22	46.4	45.8	+0.6	"		
41.2	48.6	85.2	+10.2	.9715	20.08	51.2	50.6	+0.6	"		
27.6	33.4	58.5	-16.5	.9795	13.54	38.5	37.7	+0.8	" with water added.		
35.8	42.7	74.9	-0.1	.9747	17.50	45.7	45.3	+0.4	"		
35.4	42.3	74.1	-0.9	.9756	16.77	44.7	44.1	+0.6	"		
30.8	47.1	82.6	+7.6	.9719	19.75	50.3	50.0	+0.3	"		
33.5	40.2	70.5	-4.5	.9761	16.38	43.5	43.3	+0.2	"		

examined depart from a standard of 25 under proof strength. Below this standard, marked by minus sign; above this standard, marked by + sign.

RECORD OF LIQUOR

TABLE II—

Date of Collection	Nature of Sample.	Number of Sample	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher.	Specific Gravity.
				Quantity.	—		
1907.					8 cts.		
Feb. 18	Rye whiskey....	25005	R. McDonald, Edmonton, Alb.	3 pts.	1 50	The Edmonton Wine and Spirit Co., Edmonton.	·9483
" 18	"	25006	Geo. McLaughlin, Ed. Alb.	3 "	1 50	H. Walker & Sons, Walkerville, Ont.	·9480
" 18	"	25007	Harry Finch, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9501
" 18	"	25008	L. Gouderidge, Edmonton, Alb.	3 "	1 50	Corby's, Belleville, Ont.	·9478
" 18	"	25009	Mrs. B. Heter, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9484
" 19	"	25010	Lannie Belanger, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9482
" 19	"	25011	J. N. Pomerleau, Edmonton, Alb.	3 "	1 50	Not known.....	·9405
" 19	"	25012	Castle Hotel Co., Ed. Alb.	3 "	1 50	H. Walkerville, Walkerville, Ont.	·9475
" 19	"	25013	Jas. McCausland, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9486
" 19	"	25014	Wagott & Tilly, Edmonton, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9477
" 20	"	25015	John J. Mellon, Strathcona, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9491
" 20	"	25016	E. McGuiness, Strathcona, Alb.	3 "	1 50	Hudson Bay Co., Edmonton.	·9480
" 21	"	25017	Lucien Bordeaux, St. Albert, Alb.	3 "	1 50	H. Walker & Sons, Walkerville, Ont.	·9515
" 21	"	25018	W. Aselein, St. Albert, Alb.	3 "	1 50	Gooderham & Worts, Toronto, Ont.	·9476
" 22	"	25019	T. A. Shipley, Fort Saskatchewan, Alb.	3 "	1 50	Not known.....	·9538
" 22	Scotch whiskey..	25020	Langhauser & Mina, Ft. Saskatchewan, Alb.	3 "	1 75	Strickland & Henderson, Fort Saskatchewan.	·9344
" 22	Rye whiskey....	25021	Cameron & O'Leary, Horse Hills, Alb.	3 "	1 50	J. B. Mercer, Edmonton.	·9485
" 22	Scotch whiskey..	25022	C. Gitzel, Spruce Grove, Alb.	3 "	2 00	J. B. Mercer, Edmonton.	·9322
" 23	Rye whiskey....	25023	Fred. Wader, Stony Plains, Alb.	3 "	1 50	H. Walker & Sons, Walkerville, Ont.	·9461
" 23	"	25024	L. Charlebeau, Calgary, Alb.	3 "	1 25	H. Walker & Sons, Walkerville, Ont.	·9407
" 23	"	25025	Cornell & Co., Calgary, Alb.	3 "	1 25	Gooderham & Worts, Toronto, Ont.	·9482
" 23	"	25026	Moody & Co., Calgary, Alb.	3 "	1 25	H. Walker & Sons, Walkerville, Ont.	·9462
" 23	"	25027	Stephens & Co., Calgary, Alta.	3 "	1 50	H. Walker & Sons, Walkerville, Ont.	·9473
Mar. 1	White Wheat Whiskey.	25028	The Calgary Wine and Spirit Co., Calgary.	2 qts.	1 50	The Calgary Wine and Spirit Co., Calgary.	·9556
" 5	Rye Whiskey....	25029	F. J. Dunn, Airdrie, Alta.	3 pts.	1 50	H. Walker & Sons, Walkerville, Ont.
" 5	Scotch Whiskey.	25030	McKay & Lee, Crossfield, Alta.	3 "	1 50	The Calgary Wine and Spirit Co., Calgary.	·9385
" 6	Rye Whiskey....	25031	J. C. Brewster, Bowden, Alta.	3 "	1 25	H. Walker & Sons, Walkerville, Ont.	·9442

SAMPLES ANALYSED.

ALBERTA.

RESULTS OF ANALYSIS.

Alcohol percentage.			Variation from 75 p.c. Spirit Strength.	Examination for Methyl Alcohol.					Remarks.		
Weight.	Volume	Proof Spirit.		Density.	Alcohol.	Refraction.					
						Found.	Theory.	Differ- ence.			
p. c.											
35.4	42.3	74.1	-0.9	.9751	17.17	45.4	44.9	+0.5			
35.3	42.2	73.9	-1.1	.9751	17.17	45.4	44.9	+0.5			
34.5	41.3	72.4	-2.6	.9755	16.85	44.6	44.3	+0.3			
35.6	42.5	74.5	-0.5	.9747	17.50	45.6	45.5	+0.1			
35.3	42.2	73.9	-1.1	.9749	17.33	45.7	45.3	+0.4			
35.4	42.3	74.1	-0.9	.9747	17.50	45.8	45.5	+0.3			
30.6	46.9	82.2	+7.2	.9723	19.42	50.2	49.4	+0.8			
35.8	42.7	74.9	-0.1	.9746	17.58	45.4	45.7	+0.7			
35.2	42.1	73.7	-1.3	.9748	17.42	45.9	45.4	+0.5			
35.7	42.6	74.7	-0.3	.9746	17.58	45.8	45.7	+0.1			
35.0	41.8	73.3	-1.7	.9751	17.17	45.4	44.9	+0.5			
35.5	42.4	74.3	-0.7	.9743	17.92	46.9	46.3	+0.6			
33.8	40.5	71.0	-4.0	.9758	16.62	44.3	43.8	+0.5			
35.7	42.6	74.7	-0.3	.9744	17.7	46.2	46.0	+0.2			
32.4	38.9	69.2	-6.8	.9768	15.82	42.3	42.2	+0.1			
42.6	50.2	87.9	+12.9	.9708	20.68	52.2	51.8	+0.4			
35.3	42.2	73.9	-1.1	.9751	17.42	45.5	45.4	+0.1			
43.6	51.2	80.8	-4.8	.9697	21.54	53.2	53.2	+0.0			
36.5	48.5	76.2	+1.2	.9447	37.28	78.5	78.3	+0.2			
39.5	46.8	82.0	+7.0	.9806	39.00	81.5	81.4	+0.1			
35.4	42.3	74.1	-0.9	.9466	36.22	77.4	77.2	+0.2			
36.4	48.4	76.0	+1.0	.9410	39.30	80.2	80.2	0.0			
35.0	42.8	75.1	+0.1	.9460	37.18	78.0	78.2	-0.2			
31.3	37.7	66.7	-8.3	.9359	31.06	70.3	70.5	-0.2	Genuine.		
40.6	48.0	84.1	+9.1	.9380	40.80	82.2	82.2	0.0	Sample broken in transit.		
37.6	44.7	78.4	+3.4	.9444	37.44	78.2	78.5	-0.3	Genuine.		

RECORD OF LIQUOR

TABLE II.—

Date of Collection.	Nature of Sample.	Number of Sample.	Name and Address of Vendor.	COST.		Name and Address of Manufacturer or Furnisher.	Specific Gravity.
				Quantity.	8 c.		
1907.							
Mar. 6	Rye Whiskey...	25989	Malcolm & Gladwin, 3 pts. Carstairs, Alta.	1 50	Gooderham & Worts, Toronto.	·9491	
" 6	"	25990	T. E. Driscoll, Carstairs, Alta.	1 50	Gooderham & Worts, Toronto.	
" 6	"	25991	Melligachey Bros., 3 Didsbury, Alta.	1 50	Gooderham & Worts, Toronto.	·9481	
" 6	"	25992	W. Spenham, Penbold, Alta.	1 50	H. Walker & Sons, Walkerville.	·9482	
" 7	"	25993	Buchan & Robertson, 3 Innisfail, Alta.	1 50	H. Walker & Sons, Walkerville.	·9454	
" 7	Scotch Whiskey.	25994	Brazier & Kenny, Red Deer, Alta.	1 75	Greenless Co., Scotland ..	·9356	
" 7	Rye Whiskey ..	25995	Fred Krause, Red Deer, Alta.	1 50	Gooderham & Worts, Toronto.	·9479	
" 7	" .. .	25996	G. B. Shore, Blackfalds, Alta.	1 50	S. Creighton, Lacombe, Alb.	·9485	
" 8	"	25997	Boode & Johnson, Lacombe, Alta.	1 00	H. Walker & Sons, Walkerville.	·9480	
" 8	"	25998	S. Creighton, Lacombe, 2 qts. Alta.	1 50	Gooderham & Worts, Toronto.	·9481	
" 8	"	25999	Anderson & Dea, Ponoka, Alta.	1 25	H. Walker & Sons, Walkerville.	·9484	
" 8	"	26000	Geo. Lambert, Ponoka, Alta.	1 50	S. Creighton, Lacombe, Alb.	·9480	
" 8	Scotch Whiskey.	25601	J. H. Smith, Morning side, Alta.	1 75	S. Creighton, Lacombe, Alb.	·9375	
" 12	Rum	25602	Jos. Preos, Morinville, Alta.	1 50	Hudson Bay Co., Edmonton.	·9114	
" 12	Rye Whiskey..	25603	T. Paquette, Morinville, Alta.	1 50	Edmonton Wine and Spirit Co.	·9496	
" 12	"	25604	Guertin & Hittinger, Morinville, Alta.	1 50	Hudson Bay Co., Edmonton.	·9486	
" 13	" .. .	25605	D. McDonald, Legal, Alta	1 50	Hudson Bay Co., Edmonton.	·9475	
" 18	"	25606	T. Gagnon, Athabasca Landing, Alta.	1 50	J. B. Meroe, Edmonton.	·9489	
" 18	"	25607	Thos. B. Kirk, Athabasca Landing, Alta.	1 50	Gooderham & Worts, Toronto.	·9646	

*The British Sale of Food and Drugs Act Amendment Act of 1873, Section 6, provides that it shall be a good defence to prove that admixture with water has not reduced the spirit more than 25 degrees under proof for brandy, whiskey or rum. The numbers in this column shew how far the samples examined

SAMPLES ANALYSED.

ALBERTA—Concluded.

RESULTS OF ANALYSIS.

Alcohol percentage.			Variation from 75 p.c. Spirit Strength.	Examination for Methyl Alcohol.					Remarks.
Weight.	Volume.	Proof Spirit.		Density.	Alcohol p.c.	Found.	Theory.	Difference.	
35.0	41.8	73.3	-1.7	.9479	35.55	76.4	76.6	-0.2	"
35.5	42.4	74.3	-0.7	.9471	35.95	76.8	77.0	-0.2	Sample broken in transit.
35.4	42.3	74.1	-0.9	.9489	35.05	76.1	76.0	+0.1	"
36.9	43.9	77.0	+2.0	.9444	37.44	78.5	78.5	0.0	"
42.0	49.5	86.75	+11.7	.9375	41.05	82.4	82.5	-0.1	"
35.6	42.5	74.5	-0.5	.9376	41.00	82.1	82.3	-0.2	"
35.3	42.2	73.9	-1.1	.9447	37.28	78.0	78.3	-0.3	"
35.5	42.4	74.3	-0.7	.9313	44.05	85.1	85.3	-0.2	"
35.5	42.4	74.3	-0.7	.9317	43.86	85.0	85.1	-0.1	"
35.3	42.2	73.9	-1.1	.9493	34.86	75.5	75.7	-0.2	"
35.1	42.0	73.5	-1.5	.9402	34.90	75.5	75.7	-0.2	"
41.1	48.5	85.1	+10.1	.9411	39.25	80.7	80.5	+0.2	"
53.0	60.9	106.6	+31.6	.9121	52.64	92.2	92.0	+0.2	"
34.7	41.5	72.8	-2.2	.9490	35.00	75.5	75.9	-0.4	"
35.2	42.1	73.7	-1.3	.9469	36.06	76.9	77.1	-0.2	"
35.8	42.7	74.9	-0.1	.9450	36.61	77.6	77.6	0.0	"
35.1	42.0	73.5	-1.5	.9479	35.55	76.3	76.5	-0.2	"
25.4	30.9	54.3	-20.8	.9029	26.00	63.3	63.0	+0.3	" with added water.

depart from a standard of 25 under proof strength. Below this standard, marked by minus sign; above this standard, marked by + sign.